DOCUMENT RESUME

ED 140 471 EA 009 639

TITLE A Study of Custodial Services Required by Schools in Athabasca County.
INSTITUTION Alberta Dept. of Education, Edmonton. Planning and Research Branch.
PUB DATE 4 Jan 77
NOTE 49p.; Not available in hard copy due to small print of original document

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Building Operation; *Cost Effectiveness; *Custodian Training; Educational Programs; Educational Research; Efficiency; Elementary Secondary Education; Manpower Utilization; *School Maintenance; Standards; *Task Analysis; Wages; *Work Simplification
IDENTIFIERS Alberta (Athabasca County); Canada

ABSTRACT

This study examines the required levels of custodial services for schools in the County of Athabasca. Standard work units were described and applied to the tasks specified for each school. As a result, it was found that the level of custodial staffing is presently below requirements. Recommendations were set forth for increasing the custodial staff and for improving the overall efficiency of the custodial program. Finally, a number of alternate ways of providing custodial service were identified. (Author/MLF)

**********
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
**********

ED140471

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

# A STUDY OF CUSTODIAL SERVICES REQUIRED BY SCHOOLS IN ATHABASCA COUNTY

BEST COPY AVAILABLE

Prepared by:

Planning and Research Branch
Alberta Education
Executive Building
10105 - 109 Street
Edmonton, Alberta
T5J 2V2

Telephone 427-8225

January 4, 1977



EA 009 639

## SUMMARY OF STUDY

This study was undertaken at the request of the Superintendent of Schools in Athabasca County. Its purpose has been two-fold: to determine the need for custodial services in schools in the county; and, to determine how effective and efficient services might be maintained.

A study plan was developed and used to analyze the need for custodial services in each of the schools. As a result of this study it was concluded that the present level of custodial staffing was approximately 77 per cent of what it should be.

The following recommendations have been set forth.

Recommendation 1: Increase the custodial staff to the following levels: Edwin Parr Composite High School, 6.1; Athabasca Elementary, 3.6; Smith, 2.3; Boyle, 2.8; Grassland, 1.9; Rochester, 1.2; and, Perryvale, 1.0.

Recommendation 2: In addition to the recommended custodial staff in each school, additional daytime personnel should be provided to handle routine maintenance.

Recommendation 3: A training program should be provided to upgrade the custodial staff. To ensure that these trained people are retained, salaries should be examined to ensure they are competitive on the local market.

Recommendation 4: Standardized workloads should be developed for each caretaker to ensure equity. These standards may be applied in any evaluation of custodial staff.

Recommendation 5: Fees for non-school use of rooms should be calculated on the basis of the workload measured and reported on the analysis sheets (Appendixes 3 - 9).

# A STUDY OF THE CUSTODIAL SERVICES REQUIRED BY SCHOOLS IN ATHABASCA COUNTY

During the summer of 1976 the Planning and Research Branch of Alberta Education was asked, by the Superintendent of Schools for the County of Athabasca, to assess requirements for school custodial services in the county. The task of collecting data for the study was delayed until November to allow work routines to stabilize following commencement of the 1976-77 school year.

## Study Problems

Several questions were identified at the outset of the study.

1. What are the estimated requirements for custodial services in each of the schools in the county? How do these estimates compare with present staffing arrangements?

2. What should an adequate custodial program cost? What are appropriate levels of productivity for each caretaker?

3. How can the effectiveness and efficiency of a custodial program be enhanced?

## Approach to the Study

A number of studies of custodial services were examined before selecting an approach to this study. One study conducted in Oregon (Worrell, 1972) identified four basic formulas for calculating custodial support: the area or square footage formula; the unit system formula; the diversified formula; and, time study formulas.

The square footage formula. An area is defined for each caretaker -- normally 10,000 to 12,000 square feet. A school of 24,000 ft.$^2$ would be entitled to between two and two and two-fifths custodians.

The unit system formula. A specified number of workmen are assigned to a unit. In most cases the number of workmen is based on experience.

The diversified formula. The diversified formula takes into consideration a number of variables. Typically these include: the number of teachers in a school; the number of pupils; either the number of home rooms or the number of instructional rooms to be cleaned; square footage; and, the area of the grounds.

The time study formula. The time study formula is based on a list of tasks to be completed and standard units of productivity. Standard units of productivity are generally determined in one of two ways: either by measuring actual performance with a stop watch or by applying already established standards.

Of these methods the diversified formula and the time study formula appeared to be most useful. Accordingly the necessary data collection instruments and procedures were prepared (Appendix 1) and the data were collected in each school by local personnel.

## Data Collection

Using the prepared forms (Appendix 1), the custodial tasks to be accomplished in each room in each school were identified and the frequencies at which they were to be accomplished were noted. Equally important, tasks that were unique to particular rooms were noted. As an example, the room furnaces in each of the rooms in the Grassland school were noted together with an indication of the periodic maintenance and servicing required.

The completed forms, indicating the type and frequency of service to be provided in each room, were reviewed by both school principals and the Supervisor of School Custodial Services to ensure that the proposed levels of service were both practical and adequate.

Unit Standards

The time standards used in computing manpower requirements for the custodial tasks were derived from:

- An Oregon study (Worrell, 1972),
- materials provided by the School Buildings Branch of Alberta Education,
- a "Cost comparison guide for floors" prepared by the Terrazzo, Tile and Marble Association of Canada,
- a number of articles and abstracts, and
- experience of the school custodial staff in Athabasca County.

The time standards used in this study are specified on the work-sheets (Appendix 2).

Time standards tell only part of the story. Any number of other variables serve to limit the overall productivity of the custodial staff. These include:

- floor types,
- obstructions,
- age of schools,
- type of school (elementary, junior high, etc.),
- number of floors (levels),
- quality of maintenance equipment,
- knowledge and skills of the custodial staff, and
- school policies with respect to: wearing of outdoor footwear in classrooms; chewing gum, or consuming food or drinks in instructional areas; and, student clean-up of work areas (shops, home-economics labs, art rooms, etc.) after use.

The following multipliers were used to adjust for; obstructions in the area to be cleaned, floor types, equipment quality, and floor levels.

| | | Multipliers |
|---|---|---|
| Obstructions: | Unobstructed | 0.85 |
| | Slightly Obstructed | 1.00 |
| | Obstructed | 1.15 |
| | Heavily Obstructed | 1.42 |
| Floor Type: | Terrazzo | 0.75 |
| | Concrete | 0.85 |
| | Wood or tile | 1.00 |
| Equipment Quality: | Excellent | 1.00 |
| | Good | 1.05 |
| | Fair | 1.10 |
| | Poor | 1.20 |
| Floor levels: | Single level | 1.00 |
| | Two levels | 1.03 |
| | Three or more levels | 1.06 |

The following cases illustrate the use of multipliers.

Area to be swept: 10,000 ft.$^2$ at a rate of 10 minutes per 1000 ft.$^2$

| | Case 1 | Case 2 |
|---|---|---|
| Standard time allowance | 100 minutes | 100 minutes |
| Floor type | Terrazzo (x 0.75) | Tile (x 1.00) |
| Obstruction | Unobstructed (x 0.85) | Heavily (x 1.42) |
| Equipment quality | Excellent (x 1.00) | Poor (x 1.20) |
| Floor levels | Single (x 1.00) | Three (x 1.06) |
| Standard time allowance (adjusted) | 63.8 min. | 180.6 min. |

If the floors were covered with carpet and required vacuuming (at a rate of 17 minutes per 1000 ft.$^2$) the adjusted figures would become:

- 144.5 minutes in Case 1, and
- 307.1 minutes in Case 2.

As illustrated in the above cases these variables (which reduce productivity) compound. The cleaning time for comparable areas may vary by as much as 4.8 to 1.

## Data Analysis

The collected data were analyzed by the staff of the Planning and Research Branch. To ensure consistency among schools, the cleaning frequencies specified on Appendix 2 were followed. Though this step reduces the expectations held by some principals, it was necessary in order to obtain a realistic estimate of custodial service requirements.

The results of this analysis are reported in the findings of the study.

## Findings of the Study

The data has been organized in order to answer the questions posed at the outset of the study.

1. What are the estimated requirements for custodial services in each of the schools in the county? How do these estimates compare with present staff levels?

The staffing requirements were calculated by three different methods:

- the time study formula,
- the diversified formula (Worrell, 1972), and
- the diversified formula (Alberta Education) modified to provide for care of grounds and lawns.

Time analyses and diversified formula calculations for each school are attached as Appendixes 3 to 9. The results are reported in Table 1. The daily workload requirements were calculated by dividing the "daily requirements" by 480 (the number of minutes in a work day).

2. What should an adequate custodial program cost? What are appropriate levels of productivity for each caretaker?

One way of maintaining a productive caretaker staff is by providing a salary sufficient to encourage staff to consider a career in custodial services.

A telephone survey obtained the following pay ranges for custodial personnel.

| | Caretaker | Foreman or Head Caretaker |
|---|---|---|
| Government of Alberta | 5.36 - 5.56 | 5.56 - 6.71 |
| Urban School Board | 4.98 - 5.24 | 5.39 - 5.51 |
| Red Deer Area | 4.62 - 4.90 | --- |
| Janitorial Contractor | 3.25 - 4.00 | --- |
| Average | 4.55 - 4.92 | 5.48 - 6.11 |

The janitorial contractor (in the above list) stated that their organization experiences extremely high staff turnover — likely due to low wages.

Differentials are usually paid for shifts and overtime at the following rates:

| | | Differential |
|---|---|---|
| Shifts: | Dayshift | none |
| | Evening (start between 3:00 and 9.59 p.m.) | $0.16/hr. |
| | Graveyard (start between 10:00 p.m. and 4:00 a.m.) | $0.20/hr |

Table 1

Summary of Estimated Manpower Requirments for Custodial Services in the Schools of Athabasca County

| | Estimated Manpower Requirement | | | | | | |
|---|---|---|---|---|---|---|---|
| | Time Analysis (Method 1) | Diversified Worrell (Method 2) | Diversified Alta. Ed. (Method 3) | Estimated Average | Daily Reg'ts[1] | Present Staff Level | Present Staff as Percent of Average |
| Edwin Parr | 7.39 | 5.53 | 5.41 | 6.11 | 6.8* | 5.0 | 84.7 |
| Athabasca Elem. | 4.67 | 3.16 | 3.02 | 3.62 | 4.1* | 3.0 | 85.2 |
| Smith | 2.19 | 2.42 | 2.34 | 2.32 | 1.9 | 1.5 | 74.6 |
| Boyle | 3.30 | 2.64 | 2.48 | 2.81 | 2.8 | 2.0 | 73.5 |
| Grassland | 2.39 | 1.65 | 1.58 | 1.87 | 2.2* | 1.5 | 84.3 |
| Rochester | 1.29 | 1.14 | 1.04 | 1.16 | 1.1 | 1.0 | 98.0 |
| Perryvale | 0.90 | 1.15 | 1.04 | 1.03 | 0.9 | 0.5 | 54.9 |
| Totals | 22.13 | 17.69 | 16.90 | 18.92 | 19.8 | 14.5 | 82.6 |

1. Daily requirements are based on Method 1 estimates divided by 480 (working minutes per day). Method 1 was used as a base because it indicates the specific tasks that comsume time.

* Daily requirements exceed estimated average manpower. Workloads should be altered or part-time custodians should be used.

| | | Differential |
|---|---|---|
| Overtime: | Up to four hours overtime | 1.5 x base wage |
| | Over four hours overtime | 2.0 x base wage |

Table 2 estimates the cost of a custodial program based on the lowest salary ranges presented and without differentials. Each school is assumed to have one foreman or head caretaker.

Levels of productivity for each caretaker can be computed by assigning 480 minutes of work (adjusted by use of appropriate multipliers) for each 480 minute shift. If completed satisfactorily, the caretaker has earned the specified wage. If some part-time caretakers (as may be the case with retired people who are augmenting their pension income) work at less than the average rate, they may be paid a lower salary. Even with a larger staff there would be no additional costs to the county. At the same time, highly productive caretakers may be recommended for bonuses when they exceed their work loads.

3. How can the effectiveness and efficiency of the custodial program be enhanced?

A number of steps can be taken to improve the effectiveness and efficiency of a custodial program.

Step 1: Create routes and schedules for custodial workers based on the information gathered during the study.

Step 2: Review routes and schedules with individual school custodians and make certain that no tasks have been omitted.

Step 3: Walk through the routes with custodians at each school. Provide orientation and instruction as required. Make certain that the schedule allows for personal time, unavoidable delays, rest, and unplanned work.

Table 2

Estimated Costs of Custodial Services for Schools in Athabasca County

| School | Present Staff | Cost[1] | Estimated Average | Cost[1] |
|---|---|---|---|---|
| Edwin Parr | 5.0 | 49,254 | 6.11 | 59,759 |
| Athabasca Elem. | 3.0 | 30,326 | 3.62 | 36,194 |
| Smith | 1.5 | 16,130 | 2.32 | 23,891 |
| Boyle | 2.0 | 20,862 | 2.81 | 28,528 |
| Grassland | 1.5 | 16,130 | 1.87 | 19,632 |
| Rochester | 1.0 | 11,398 | 1.16 | 12,913 |
| Perryvale | 0.5 | 5,699 | 1.03 | 11,682 |
| Totals | 14.5 | 149,799 | 18.92 | 192,599 |

1 Costs computed on the basis of one head caretaker (5.48 per hour) in each school. Remaining staff earn 4.55 per hour. It must be noted that these costs are only estimates.

Step 4: Ensure that the equipment provided to the custodial staff is of good quality. Some of the schools in the county (Rochester, Perryvale, and Smith) have poor equipment which tends to increase the time to complete the required services by approximately 20 per cent.

Conclusions and Recommendations

By the standards developed and applied in this study, the schools are understaffed for the levels of custodial care expected.

*It is recommended that the following custodial staff should be provided:*

| | |
|---|---|
| *Edwin Parr* | *6.1 caretakers* |
| *Athabasca Elementary* | *3.6 caretakers* |
| *Smith* | *2.3 caretakers* |
| *Boyle* | *2.8 caretakers* |
| *Grassland* | *1.9 caretakers* |
| *Rochester* | *1.2 caretakers* |
| *Perryvale* | *1.0 caretakers* |
| *Total* | *18.9 caretakers* |

Provision has not been made in this study for routine maintenance such as: replacement of lights, minor plumbing service (leaking faucets and stopped drains), replacement of broken glass, cleaning up spills, or, repairing broken or faulty equipment.

*It is recommended that each school have someone working during the day shift to handle routine maintenance and repairs. In addition to those tasks, the day person in each school should be assigned specific tasks such as cleaning of hallways and restrooms.*

Many of the caretakers have had no previous custodial experience. They are unfamiliar with many of the most effective ways and means of caring for schools.

*Training programs should be instituted to upgrade the skills of the custodial staff.*

Training programs are often provided by suppliers of custodial and caretaking supplies. As well, the Alberta Vocational Center in Edmonton provides a six-week program in custodial service. If demand is sufficient they are also prepared to offer an in-service program locally. A description of the program is contained in Appendix 10.

The benefit of training and upgrading of the custodial staff is reaped only if the trained staff continue to be employed.

*The salary scale should be examined to ensure that salaries paid for custodial services are competitive on the local market.*

The productivity of older (or part-time) workers may not be as high as that of younger workers.

*Application of the standards can be used to determine reasonable workloads. These workloads should be the basis for establishing salaries. When, over an extended period, these workloads are only partially completed salaries should be adjusted accordingly.*

Schools are used for a variety of non-school activities.

*Charges for custodial services should be made in accordance with the daily work requirements for that area. The form attached as Appendix 11 may be used for completion of the necessary calculations.*

## Alternatives

One assumption evident throughout this report is that a permanent custodial staff must be provided in each school. It is important to note that there are other alternatives. The most common alternatives are:

1. An on-site custodian/maintenance man (days) and a travelling cleaning crew to perform the following functions: daily cleaning, weekly cleaning, monthly and periodic cleaning, or combinations of the above.

2. An on-site custodian/maintenance man (days) and a contracted cleaning crew to perform the following functions: daily cleaning, weekly cleaning, monthly and periodic cleaning, or combinations of the above.

3. Combinations of the above.

## Summary

This study has examined the required levels of custodial services for schools in the County of Athabasca. To do this, standard work units were described and applied to the tasks specified for each school. As a result, it was found that the level of custodial staffing is presently below requirements. Recommendations were set forth for increasing the custodial staff and for improving the overall efficiency of the custodial program. Finally, a number of alternate ways of providing custodial service were identified.

BIBLIOGRAPHY

Art, J., "County reports trouble getting school caretakers." Red Deer Advocate, 26 November, 1976.

Alberta Education, "Building, Cleaning Maintenance, caretaking techniques."

Day, William C. (editor), School Housekeeping: A guide for the modern custodians." School Planning Lab, Tennessee University, Knoxville.

Feldman, Edwin B., "12 Ways to Save on Maintenance Costs." American School and University. 44, 10, pages 11-12.

Forest, W.F., "School Custodial Costs: All you need to do is measure, count, add, divide, and schedule... or get a consultant to do it for you." School Progress, April 1973, pages 44-47.

Terrazzo, Tile and Marble Association of Canada, "Cost Comparison Guide for Floors", Willowdale, Ontario.

Webber, Robert A., "A Work Management System Helped the Fresno Public Schools Get a Lot More for a Lot Less Money." The American School Board Journal, June 1976, pages 45-46.

Worrell, William K., "School custodial services: Exemplary standards and practices." Oregon School Study Council, Eugene, Oregon.

"How to Improve Your Custodial Programs". Nation's Schools, 93, 2, pages 72-74.

## Developing a Work Management System

Development of a school work management system requires that a number of specific steps be carried out.

1. Determine the nature and frequency of the tasks that custodians regularly perform, including all weekly, monthly or yearly assignments.

2. Combine tasks or elements of work that usually are performed or could be performed together, and lump them into what are called benchmark data. By computing the time and frequency required for each task, the total time required for performing benchmark tasks can be determined on a weekly basis.

3. Take an inventory of schools: number and size of classrooms, restrooms, square footage of hallways, offices, and so forth.

4. Determine the manload requirement for each school by applying a time standard to each benchmark task, and then determine how much time is needed to clean, polish, and repair each school building. Be sure to allow for personal time, unavoidable delays, rest, and unplanned work.

5. Create routes and schedules for custodial workers based on the information gleaned from the aforementioned computations.

6. Review routes and schedules with individual building principals, and make sure that no tasks have been omitted.

7. Walk through the routes with the custodians at each school, and begin an orientation process to ensure that enough time has been allotted for each assignment.

Steps 1-4 amount to an inventory of tasks to be completed and application of time standards in order to determine the workload. Steps 5-7 refer to development of a work management plan to achieve the goals established for maintenance and caretaking and in keeping with the levels of manpower recommended by the workload calculation.

In completing Steps 5-7 it is important to examine the alternatives that are open to management. The most common alternatives are:

1. On-site custodial staff for each school.

2. On-site custodian/maintenance man and a travelling cleaning crew to perform the following functions: daily cleaning, weekly cleaning, monthly and periodic cleaning, or combinations of the above.

3. On-site custodian/maintenance man and a contracted cleaning crew to perform the following functions: daily cleaning, weekly cleaning, monthly and periodic cleaning, or combinations of the above.

4. Combinations of the above.

Development Plan for Athabasca County

The following steps should be carried out.

1. Complete Form 1 for each room in each school in the county.

2. Combine the forms completed in Step 1 for each school and complete Form 2 for each school.

3. Determine the total workload for each school and for all schools combined.

4. After considering alternatives open, develop a plan for providing maintenance and custodian services for the county.

5. Instruct the maintenance men and custodians in their tasks. Make certain that they are using the easiest and most efficient methods.

6. Evaluate maintenance men and custodians on the basis of the adopted standards.

7. Review and revise the work management system as required.

# ROOM AND HALLWAY CUSTODIAL SERVICE ANALYSIS

Complete this form for each room in each school.

School: _____ Room number and description: _____

**FLOOR**

Length: _____ Width: _____ Area: _____

Floor type: _____

Floor Conditions:
- ☐ Unobstructed
- ☐ Slightly obstructed
- ☐ Obstructed
- ☐ Heavily obstructed

Indicate condition of floors in this room or hallway.

Enter number of units. The number is calculated by dividing the length, area, quantity, etc. by the standard. For example: 2500 $ft^2$ of floor to be swept amounts to 2.5 units (2500 ÷ 1000 = 2.5)

Enter the number of times the activity must be completed daily, weekly, etc..

List other activities that must be accomplished.

| Activity | Units | Standard | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|
| Sweep | | 10 min/1000 $ft^2$ | | | | | | |
| Dust mop | | 9 min/1000 $ft^2$ | | | | | | |
| Damp mop | | 23 min/1000 $ft^2$ | | | | | | |
| Wet mop & rinse | | 45 min/1000 $ft^2$ | | | | | | |
| Machine scrub | | 30 min/1000 $ft^2$ | | | | | | |
| Machine polish | | 25 min/1000 $ft^2$ | | | | | | |
| Vacuum-wet pick up | | 27 min/1000 $ft^2$ | | | | | | |
| Vacuum-carpet | | 17 min/1000 $ft^2$ | | | | | | |
| Strip and rewax | | 120 min/1000 $ft^2$ | | | | | | |
| | | | | | | | | |
| Blackboards & chalk ledge | | 1 min/10 $ft^2$ | | | | | | |
| Counters | Wash | 5 min ea | | | | | | |
| | Dust | 1 min ea | | | | | | |
| Chairs | Wash | 2 min ea | | | | | | |
| | Dust | .5 min ea | | | | | | |
| Desks | Wash | 4 min ea | | | | | | |
| | Dust | .8 min ea | | | | | | |
| Drafting tables | Wash | 5 min ea | | | | | | |
| | Dust | 1 min ea | | | | | | |
| Science desks | Wash | 5 min ea | | | | | | |
| | Dust | 1 min ea | | | | | | |
| Tables | Wash | 4 min ea | | | | | | |
| | Dust | 1 min | | | | | | |
| Sinks | | 2 min ea | | | | | | |
| Toilets | | 4 min ea | | | | | | |
| Urinals | | 3 min ea | | | | | | |
| Basins | | 2 min ea | | | | | | |
| Showers | | 2 min ea | | | | | | |
| Fountains | | 2 min ea | | | | | | |
| Mirrors | | 3 min ea | | | | | | |
| Lockers | Wash | 2 min ea | | | | | | |
| | Dust | .3 min ea | | | | | | |
| Doors-glass & woodwork | | 2 min ea | | | | | | |
| Windows-large pane (inside) | | 1 min/10 $ft^2$ | | | | | | |
| Windows-small pane (inside) | | 1 min/4 $ft^2$ | | | | | | |
| Windows-large pane (outside) | | 1 min/5 $ft^2$ | | | | | | |
| Windows-small pane (outside) | | 1 min/3 $ft^2$ | | | | | | |
| Empty waste basket | | .3 min ea | | | | | | |

| Activity | Units | Standard | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|
| Fill towel dispenser | | 1 min ea | | | | | | |
| Fill tissue dispenser | | 1 min ea | | | | | | |
| Fill soap dispenser | | 2 min ea | | | | | | |
| Wash light fixture-4 ft | | 6 min ea | | | | | | |
| Wash light fixture-8 ft | | 9 min ea | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | |

# SCHOOL SUMMARY REPORT

Complete this form for each school.

School: _____

Quality of Maintenance Equipment:
- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

Indicate the quality of the equipment available for maintenance in this school.

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Totals | | | | | | | | | |

Enter the total custodial times calculated on Form 1.

Indicates the total custodial time required for daily, semi-weekly, etc. work.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Grounds | | | | | | | | | |
| Other duties: | Waste disposal | 10 min/day | | | | | | | |
| | Check clocks | .5 min ea | | | | | | | |
| | Tool maintenance per shift | 10 min/shift | | | | | | | |
| | Open building | 10 min/day | | | | | | | |
| | Close and lock building | 10 min/day | | | | | | | |
| | Obtain supplies for shift | 8 min/day | | | | | | | |
| | Clean entry doors-glass & woodwork | 6 min ea | | | | | | | |
| | Sweep/clean outside walkways | 5 min/100 $ft^2$ | | | | | | | |
| | 1. | | | | | | | | |
| | 2. | | | | | | | | |
| | 3. | | | | | | | | |
| | 4. | | | | | | | | |
| | 5. | | | | | | | | |
| | 6. | | | | | | | | |
| | 7. | | | | | | | | |
| | 8. | | | | | | | | |
| | 9. | | | | | | | | |
| | Totals for school | | | | | | | | |

Enter the time required to complete other tasks in this school.

Indicates the total custodial time for each category of activity.

FORM 2

# ROOM AND HALLWAY CUSTODIAL SERVICE ANALYSIS

School: _____ Room number and description: _____

FLOOR — Length: _____ Width: _____ Area: _____
Floor type: _____
Floor Conditions: ☐ Unobstructed ☐ Slightly obstructed ☐ Obstructed ☐ Heavily obstructed

| Activity | Units | Standard | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|
| Sweep[1,2] | | 10 min/1000 ft² | | | | | | |
| Dust mop[1,2] | | 9 min/1000 ft² | | | | | | |
| Damp mop[1,2] | | 23 min/1000 ft² | | | | | | |
| Wet mop & rinse[1,2] | | 45 min/1000 ft² | | | | | | |
| Machine scrub[1,2] | | 30 min/1000 ft² | | | | | | |
| Machine polish[1,2] | | 25 min/1000 ft² | | | | | | |
| Vacuum-wet pick up[1,2] | | 27 min/1000 ft² | | | | | | |
| Vacuum-carpet[2] | | 17 min/1000 ft² | | | | | | |
| Strip and rewax[1,2] | | 120 min/1000 ft² | | | | | | |
| | | | | | | | | |
| Blackboards & chalk ledge | | 1 min/10 ft² | / | | | | | |
| Counters | Wash | 5 min ea | | | | | | |
| | Dust | 1 min ea | | | / | | | |
| Chairs | Wash | 2 min ea | | | | | | |
| | Dust | .5 min ea | | | / | | | |
| Desks | Wash | 4 min ea | | | | | | |
| | Dust | .8 min ea | | | / | | | |
| Drafting tables | Wash | 5 min ea | | | | | | |
| | Dust | 1 min ea | | | / | | | |
| Science desks | Wash | 5 min ea | | | | | | |
| | Dust | 1 min ea | | | / | | | |
| Tables | Wash | 4 min ea | | | | | | |
| | Dust | 1 min ea | | | / | | | |
| Sinks | | 2 min ea | / | | | | | |
| Toilets | | 4 min ea | / | | | | | |
| Urinals | | 3 min ea | / | | | | | |
| Basins | | 2 min ea | / | | | | | |
| Showers | | 2 min ea | / | | | | | |
| Fountains | | 2 min ea | / | | | | | |
| Mirrors | | 3 min ea | / | | | | | |
| Lockers | Wash | 2 min ea | | | | | | |
| | Dust | .3 min ea | / | | | | | |
| Doors-glass & woodwork | | 2 min ea | | | | | / | |
| Windows-large pane (inside) | | 1 min/10 ft² | | | | | / | |
| Windows-small pane (inside) | | 1 min/4 ft² | | | | | / | |
| Windows-large pane (outside) | | 1 min/5 ft² | | | | | | 1[3] |
| Windows-small pane (outside) | | 1 min/3 ft² | | | | | | 1[3] |
| Empty waste basket | | 3 min ea | / | | | | | |

Varies with room size

| Activity | Units | Standard | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|
| Fill towel dispenser | | 1 min ea | / | | | | | |
| Fill tissue dispenser | | 1 min ea | / | | | | | |
| Fill soap dispenser | | 2 min ea | | | / | | | |
| Wash light fixture-4 ft | | 6 min ea | | | | | | 1[3] |
| Wash light fixture-8 ft | | 9 min ea | | | | | | 1[3] |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Total custodial time | | | | | | | | |

Multipliers

| | | |
|---|---|---|
| Floor Type: | Terrazzo | 0.75 |
| | Cement | 0.85 |
| | Wood or Tile | 1.00 |
| Obstructions: | Unobstructed | 0.85 |
| | Slightly obstructed | 1.00 |
| | Obstructed | 1.15 |
| | Heavily obstructed | 1.42 |

[1] Apply "floor type" multiplier
[2] Apply "obstructions" multiplier
[3] Annually



FORM 1

# SCHOOL SUMMARY REPORT

School: _____

Quality of Maintenance Equipment:
- [x] Excellent
- [ ] Good
- [ ] Fair
- [ ] Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Subtotal | | | | | | | | | |
| [1] "Level" Multiplier = | | | | | | | | | |
| [2] Grounds* 60 mins/10,000ft$^2$ | | | | | | | | | |
| Subtotal | | | | | | | | | |
| [3] "Equipment Quality" Multiplier = | | | | | | | | | |
| Other duties: Waste disposal | | | 10 min/day | | | | | | |
| Check clocks | | | .5 min ea | | | | | | |
| Tool maintenance per shift | | | 10 min/shift | | | | | | |
| Open building | | | 10 min/day | | | | | | |
| Close and lock building | | | 10 min/day | | | | | | |
| Obtain supplies for shift | | | 8 min/day | | | | | | |
| Clean entry doors-glass & woodwork * | | | 6 min ea | | | | | | |
| Sweep/clean outside walkways * | | | 5 min/100 ft$^2$ | | | | | | |
| 1. | | | | | | | | | |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Totals for School (Minutes) | | | | | | | | | |

[1] "Level" multiplier: one level-1.00; two levels-1.03; three levels-1.06.
[2] Cut grass lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multiplier: excellent-1.00; good-1.05; fair-1.10; poor-1.20.
* Walks cleaned four (4) times per year.

FORM 2

# ESTIMATES OF SCHOOL STAFFING REQUIREMENTS

School: Edwin Parr Composite High School

## 1. Time Analysis Formula

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily requirements | 3281 | minutes | x 200 = | 656,200 | minutes |
| Semi-weekly " | | " | x 80 = | | " |
| Weekly " | 2501 | " | x 40 = | 100,040 | " |
| Semi-monthly " | 2 | " | x 20 = | 40 | " |
| Monthly " | 1885 | " | x 10 = | 18,850 | " |
| Other " | | | | 57,981 | " |
| | Total Requirements | | | 833,111 | minutes per year |
| Man-year expressed in minutes (divide by)[1] | | | | 112,800 | |
| | Staff requi ements | | | 7.39 | men per year |

[1] Based on 40 hours per week with three weeks vacation and ten paid holidays.

## 2. Diversified Formula (Worrell, 1972)

$$\left( \frac{39}{8} \text{ Teachers} + \frac{809}{225} \text{ Pupils} + \frac{44}{11} \text{ Rooms} + \frac{85760 \text{ ft}^2}{15000} + \frac{11}{2} \text{ Acres} \right) \times \frac{1}{5} = 4.74 \text{ men per year}$$

5.53 men per year adjusted[2]

## 3. Diversified Formula ( Alberta Education)

$$\left( \frac{39}{8} \text{ Teachers} + \frac{809}{235} \text{ Pupils} + \frac{32}{8} \text{ Rooms} + \frac{85760 \text{ ft}^2}{16000} + \frac{11}{2} \text{ Acres} \right) \times \frac{1}{5} = 4.64 \text{ men per year}$$

5.41 men per year adjusted[2]

[2] Multiply "men per year" by "floor levels" factor and "equipment quality" factor.

Floor levels factor: 1.06

Equipment quality factor: 1.10

# SCHOOL SUMMARY REPORT

Number of Teachers: 39 Number of Pupils: 809 Area: 85760

Number of Rooms to be Cleaned: 44 Acres of Grass: 11

School: Edwin Parr Composite

Quality of Maintenance Equipment: ☐Excellent ☐Good ☒Fair ☐Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Practice Room | 16 | 10 | 160 | 8 | | 7 | | 1 | 7 |
| Practice Room | 16 | 10 | 160 | 8 | | 10 | | 1 | 7 |
| Practice Room | 16 | 10 | 160 | 8 | | 10 | | 1 | 7 |
| Music Room | 60 | 32 | 1920 | 39 | | 45 | | 3 | 171 |
| Class room #9 | 30 | 24 | 720 | 18 | | 29 | | 28 | 425 |
| #8 | 24 | 20 | 480 | 10 | | 35 | | 22 | 332 |
| #7 | 30 | 24 | 720 | 12 | | 36 | | 28 | 425 |
| #6 | 36 | 24 | 864 | 15 | | 29 | | 34 | 554 |
| #5 | 40 | 20 | 800 | 14 | | 29 | | 24 | 294 |
| #4 | 40 | 20 | 800 | 14 | | 31 | | 24 | 483 |
| #3 | 40 | 20 | 800 | 11 | | 32 | | 24 | 483 |
| #2 | 40 | 20 | 800 | 10 | | 31 | | 24 | 483 |
| #1 | 40 | 20 | 800 | 14 | | 37 | | 24 | 483 |
| Boiler Room G | 32 | 30 | 960 | | | 11 | | | 76 |
| Boiler Room | 24 | 24 | 576 | | | 6 | | | |
| Subtotal | | | 87022 | 2719 | | 1892 | 2 | 1617 | 33613 |
| [1] "Level" Multiplier = 1.06 | | | | 2882 | | 2010 | 2 | 1714 | 35630 |
| [2] Grounds* 60 mins/10,000ft$^2$ | | | 20x 120000<br>1x 280000 | | | | | | 14400<br>1680 |
| Subtotal | | | | 2882 | | 2010 | 2 | 1714 | 51710 |
| [3] "Equipment Quality" Multiplier = 1.10 | | | | 3170 | | 2211 | 2 | 1885 | 56881 |
| Other duties: Waste disposal | | | 10 min/day | 10 | | | | | |
| Check clocks | | | .5 min ea | 33 | | | | | |
| Tool maintenance per shift | | | 10 min/shift | 10 | | | | | |
| Open building | | | 10 min/day | 10 | | | | | |
| Close and lock building | | | 10 min/day | 10 | | | | | |
| Obtain supplies for shift | | | 8 min/day | 8 | | | | | |
| Clean entry doors-glass & woodwork | | | 6 min ea | 30 | | | | | |
| Sweep/clean outside walkways 5500 | | | 5 min/100 ft$^2$ | | | | | | 1100 |
| 1. Entry pads 5800 | | | | | | 290 | | | |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| | | | | | | | | | |
| Totals for School (Monitor) | | | | 3281 | | 2501 | 2 | 1885 | 57981 |

[1] "Level" multipliers one level-1.00; two levels-1.03; three levels-1.06.
[2] Cut grass lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multipliers excellent-1.00; good-1.05; fair-1.10; poor-1.20.
* Walks cleaned four (4) times per year.

SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Boilers, tanks etc. | | | | 24 | | | | | 1560 |
| Drafting office | 12 | 10 | 120 | 6 | | 4 | | 4 | 30 |
| Drafting Room | 44 | 18 | 792 | 13 | | 30 | | 25 | 496 |
| Boys' sick room | 20 | 12 | 240 | 35 | | | | 10 | 160 |
| Boys' sick room | 20 | 12 | 240 | 36 | | | 2 | 8 | 160 |
| Gym office | 12 | 10 | 120 | 8 | | 1 | | 3 | 59 |
| Gym office | 20 | 14 | 280 | 2 | | | | 4 | 99 |
| Gym store room | 20 | 14 | 280 | 5 | | | | | 81 |
| Gym store room | 20 | 14 | 280 | 5 | | | | | 81 |
| Gym stage | 46 | 20 | 920 | 9 | | | | 23 | 298 |
| Gym | 100 | 80 | 8000 | 82 | | 30 | | | 2637 |
| Sewing room | 52 | 24 | 1248 | 18 | | 26 | | 54 | 903 |
| Pantry | 20 | 10 | 200 | 8 | | | | 7 | 107 |
| Laundry room | 30 | 24 | 720 | 17 | | | | 19 | 322 |
| Home Ec. room | 52 | 24 | 1248 | 26 | | 23 | | 46 | 761 |
| Music store room | 16 | 12 | 192 | 8 | | | | 5 | 53 |
| Music office | 12 | 10 | 120 | 6 | | | | 4 | 30 |
| Practice room | 16 | 10 | 160 | 8 | | 6 | | 1 | 7 |
| Store room | 36 | 12 | 432 | 7 | | 7 | | | 18 |
| Secretarys' office | 12 | 10 | 120 | 12 | | 2 | | | 12 |
| Assistant princ. office | 12 | 12 | 144 | 15 | | | | 1 | 13 |
| Shop Classroom | 24 | 20 | 480 | 31 | | | | 17 | 180 |
| Janitor's office | 30 | 12 | 360 | 15 | | 17 | | 3 | 102 |
| Paint room | 16 | 10 | 160 | 4 | | 5 | | | 15 |
| Shop storage room | 20 | 16 | 320 | | | 3 | | | 93 |
| Shop office | 24 | 10 | 240 | 14 | | | | 10 | 85 |
| Shop | 72 | 50 | 3600 | 91 | | | | 122 | 1396 |
| Janitor's room | 32 | 12 | 384 | | | 4 | | | 18 |
| Guidance waiting room | 20 | 12 | 240 | 9 | | 7 | | 9 | 79 |
| Guidance room | 16 | 10 | 160 | 6 | | 9 | | 1 | 51 |
| TV | 24 | 14 | 336 | 8 | | 18 | | 8 | 103 |
| Sick room | 16 | 10 | 160 | 34 | | 9 | | 2 | 61 |
| Teachers' workroom | 16 | 10 | 160 | 5 | | 8 | | 6 | 50 |
| Principal's office | 18 | 12 | 216 | 9 | | 5 | | 3 | 27 |
| Main office | 28 | 20 | 560 | 18 | | 16 | | | 237 |
| Trophy cabinet | 10 | 4 | 40 | 2 | | 6 | | | 12 |

SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Library storage room | 28 | 12 | 336 | 13 | | | | 8 | 81 |
| Library workroom | 12 | 10 | 120 | 4 | | 9 | | 3 | 35 |
| Library office | 12 | 8 | 96 | 7 | | | | | 6 |
| Library | 56 | 46 | 2576 | 68 | | 111 | | | 432 |
| Teachers' workroom | 28 | 12 | 336 | 13 | | | | 10 | 77 |
| Staff room | 24 | 24 | 576 | 45 | | | | 5 | 53 |
| Science work room | 24 | 12 | 288 | 14 | | | | 10 | 153 |
| Science lab | 48 | 24 | 1152 | 36 | | 30 | | 33 | 362 |
| Dark room | 14 | 10 | 140 | 8 | | | | 4 | 41 |
| Chemistry workroom | 20 | 12 | 240 | 7 | | 9 | | 8 | 87 |
| Chemistry lab | 36 | 30 | 1080 | 41 | | 27 | | 32 | 423 |
| Chemistry store room | 24 | 8 | 192 | 13 | | | | 5 | 65 |
| Physics lab | 36 | 30 | 1080 | 40 | | 32 | | 29 | 436 |
| Language lab | 32 | 28 | 896 | 26 | | 19 | | 24 | 227 |
| Typing room | 42 | 28 | 1176 | 29 | | 21 | | 36 | 463 |
| Typing room | 42 | 28 | 1176 | 36 | | 10 | | 36 | 463 |
| Work room | 24 | 18 | 432 | 20 | | | | 15 | 133 |
| Work room | 20 | 12 | 240 | 13 | | | | 11 | 84 |
| Business office | 12 | 8 | 96 | 2 | | 7 | | 5 | 31 |
| Business machine room | 42 | 34 | 1428 | 19 | | 38 | | 46 | 655 |
| Auxiliary room | 60 | 38 | 2280 | 53 | | 118 | | | 258 |
| Book-keeping room | 32 | 26 | 832 | 26 | | 42 | | 29 | 338 |
| Storage room | 24 | 20 | 480 | | | 5 | | | 128 |
| Merchandise room | 32 | 28 | 896 | 13 | | 15 | | 28 | 357 |
| Stairways | 145 | 10 | 1450 | 8 | | 38 | | | 172 |
| Store rooms | 32 | 20 | 640 | | | 9 | | 1 | 43 |
| Room #12 | 32 | 24 | 768 | 13 | | 27 | | 28 | 268 |
| Room #13 | 36 | 24 | 864 | 15 | | 27 | | 28 | 271 |
| Art office | 24 | 12 | 288 | 17 | | 4 | | 10 | 119 |
| Art room | 36 | 24 | 864 | 28 | | 27 | | 27 | 267 |
| Room #15 | 36 | 24 | 864 | 13 | | 26 | | 27 | 267 |
| Room #14 | 36 | 24 | 864 | 16 | | 27 | | 28 | 280 |
| Drama room | 50 | 24 | 1200 | 19 | | 47 | | 41 | 384 |
| Room #104 | 30 | 28 | 840 | 12 | | 26 | | 25 | 310 |
| Room #103 | 30 | 28 | 840 | 18 | | 27 | | 25 | 310 |
| Science lab | 36 | 24 | 864 | 32 | | 30 | | 33 | 362 |

# SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Room #102 | 30 | 28 | 840 | 15 | | 26 | | 25 | 310 |
| #101 | 30 | 29 | 340 | 26 | | 9 | | 25 | 310 |
| #204 | 30 | 28 | 840 | 20 | | 27 | | 25 | 310 |
| #203 | 30 | 28 | 840 | 18 | | 27 | | 25 | 310 |
| #202 | 30 | 28 | 840 | 17 | | 27 | | 25 | 310 |
| #201 | 30 | 28 | 840 | 17 | | 27 | | 25 | 310 |
| Biology Store room | 24 | 8 | 192 | 11 | | 24 | | 5 | 65 |
| Biology lab | 36 | 30 | 1080 | 38 | | 31 | | 32 | 423 |
| Hallways (North) | 638 | 10 | 6380 | 174 | | | | 147 | 2190 |
| Hallways (South) | 840 | 10 | 8400 | 293 | | 193 | | | 3874 |
| Girls' restroom | 20 | 14 | 280 | 41 | | 7 | | | 161 |
| Girls' restroom | 24 | 12 | 288 | 56 | | 7 | | | 145 |
| Girls' shower | 30 | 16 | 480 | 67 | | 12 | | | 547 |
| Girls' restroom | 16 | 8 | 128 | 18 | | 2 | | | 64 |
| Girls' restroom | 16 | 8 | 128 | 18 | | 2 | | | 64 |
| Girls' restroom | 20 | 10 | 200 | 37 | | 5 | | | 111 |
| Womans' restroom | 8 | 6 | 48 | 21 | | 2 | | | 52 |
| Girls' restroom | 22 | 10 | 220 | 38 | | 5 | | | 99 |
| Boys' restroom | 20 | 14 | 280 | 41 | | 8 | | | 170 |
| Boys' restroom | 24 | 12 | 288 | 49 | | 7 | | | 139 |
| Boys' shower | 32 | 16 | 512 | 50 | | 12 | | | 256 |
| Boys' restroom | 16 | 8 | 128 | 20 | | 2 | | | 64 |
| Boys' restroom | 20 | 10 | 200 | 46 | | 5 | | | 111 |
| Mens' restroom | 8 | 6 | 48 | 18 | | 2 | | | 52 |
| Mens' restroom | 22 | 10 | 220 | 42 | | 5 | | | 99 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

# ESTIMATES OF SCHOOL STAFFING REQUIREMENTS

School: Athabasca Elementary

## 1. Time Analysis Formula

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily requirements | 1990 | minutes | x | 200 = | 398,000 | minutes |
| Semi-weekly " | 38 | " | x | 80 = | 3,040 | " |
| Weekly " | 1688 | " | x | 40 = | 67,520 | " |
| Semi-monthly " | 1 | " | x | 20 = | 20 | " |
| Monthly " | 2607 | " | x | 10 = | 26,070 | " |
| Other " | | | | | 31,196 | " |
| | Total Requirements | | | | 525,846 | minutes per year |
| Man-year expressed in minutes (divide by)[1] | | | | | 112,800 | |
| | Staff requirements | | | | 4.66 | men per year |

[1] Based on 40 hours per week with three weeks vacation and ten paid holidays.

## 2. Diversified Formula (Worrell, 1972)

$$\left( \frac{24}{8} \text{ Teachers} + \frac{569}{225} \text{ Pupils} + \frac{32}{11} \text{ Rooms} + \frac{57990 \text{ ft}^2}{15000} + \frac{5.5}{2} \text{ Acres} \right) \times \frac{1}{5} = 3.01 \text{ men per year}$$

3.16 men per year adjusted[2]

## 3. Diversified Formula ( Alberta Education)

$$\left( \frac{24}{8} \text{ Teachers} + \frac{569}{235} \text{ Pupils} + \frac{21}{8} \text{ Rooms} + \frac{57990}{16000} \text{ ft}^2 + \frac{5.5}{2} \text{ Acres} \right) \times \frac{1}{5} = 2.88 \text{ men per year}$$

3.02 men per year adjusted[2]

[2] Multiply "men per year" by "floor levels" factor and "equipment quality" factor.

Floor levels factor: 1.00

Equipment quality factor: 1.05

# SCHOOL SUMMARY REPORT

Num of Teachers: 24 Number of Pupils: 569 Area: 57,790

Number of Rooms to be Cleaned: 32 Acres of Grass: 5.5

School: Athabasca Elementary

Quality of Maintenance Equipment: ☐ Excellent ☒ Good ☐ Fair ☐ Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Hallways | | | 7600 | 236 | | 24 | | | 2335 |
| Work & supply rooms | 32 | 16 | 608 | 20 | | 19 | | | 371 |
| Conference room | 22 | 16 | 352 | 8 | 2 | 6 | | 17 | 149 |
| Infirmary (North) | 19 | 10 | 190 | 24 | | 1 | 1 | 11 | 83 |
| " (South) | 21 | 14 | 294 | 24 | | 2 | | 17 | 139 |
| Staff room | 25 | 22 | 550 | 18 | | 18 | | | 310 |
| Staff workroom | 30 | 15 | 450 | 10 | | 6 | | | 400 |
| Storage rooms | | | 1188 | | 1 | | | 16 | 12 |
| Restrooms | | | 1560 | 46 | | 30 | | | 710 |
| Entry ways (8) | | | 2407 | 43 | | 140 | | | 505 |
| School store | 18 | 12 | 216 | 9 | | 4 | | | 253 |
| Boiler room | 45 | 19 | 855 | | | | | | |
| Green house | 28 | 16 | 448 | 110 | | 11 | | 2280 | 276 |
| Penthouse (11) | | | 1760 | | | | | | |
| Classroom #1 | 50 | 30 | 1500 | 65 | 1 | 52 | | | 552 |
| Subtotal | | | 53762 | 1831 | 36 | 1608 | 1 | 2483 | 21621 |
| [1] "Level" Multiplier = 1.00 | | | | 1831 | 36 | 1608 | 1 | 2483 | 21621 |
| [2] Grounds* 60 mins/10,000ft$^2$ | | | 180000<br>40000 | | | | | | 1080<br>4800 |
| Subtotal | | | | 1831 | 36 | 1608 | 1 | 2483 | 27501 |
| [3] "Equipment Quality" Multiplier = 1.05 | | | | 1923 | 28 | 1688 | 1 | 2607 | 28876 |
| Other duties: Waste disposal | | 10 min/day | | 10 | | | | | |
| Check clocks | | .5 min ea | | 19 | | | | | |
| Tool maintenance per shift | | 10 min/shift | | 10 | | | | | |
| Open building | | 10 min/day | | 10 | | | | | |
| Close and lock building | | 10 min/day | | 10 | | | | | |
| Obtain supplies for shift | | 8 min/day | | 8 | | | | | |
| Clean entry doors-glass & woodwork | | 6 min ea | | | | | | | |
| [4] Sweep/clean outside walkways 11631 ft$^2$ | | 5 min/100 ft$^2$ | | | | | | | 2320 |
| 1. | | | | | | | | | |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| | | | | | | | | | |
| Total Per School (Minutes) | | | | 1990 | 38 | 1688 | 1 | 2607 | 31196 |

[1] "Level" multiplier: one level-1.00; two levels-1.03; three levels-1.06.
[2] Cut grass lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multipliers: excellent-1.00; good-1.05; fair-1.10; poor-1.20.
[4] Walks cleaned four (4) times per year.

# SCHOOL SUMMARY REPORT

| Hallways and room Numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Classroom # 2 | 30 | 30 | 900 | 32 | | 34 | | | 492 |
| # 3 | 30 | 27 | 810 | 11 | | 30 | | | 484 |
| # 4 | 20 | 30 | 600 | 20 | | 42 | | | 338 |
| # 5 | 45 | 40 | 1800 | 58 | 1 | 44 | | | 906 |
| # 6 | 35 | 40 | 1400 | 47 | | 34 | | | 704 |
| # 7 | 25 | 35 | 875 | 25 | | 33 | | | 372 |
| # 8 | 30 | 25 | 750 | 17 | | 35 | | | 526 |
| # 9 | 30 | 25 | 750 | 17 | | 33 | | | 434 |
| #10 | 30 | 28 | 840 | 25 | | 36 | | | 504 |
| #11 | 30 | 30 | 900 | 28 | | 31 | | | 410 |
| #12 | 30 | 25 | 750 | 17 | | 34 | | | 514 |
| #13 | 30 | 25 | 750 | 17 | | 30 | | | 506 |
| #14 | 30 | 25 | 750 | 17 | | 28 | | | 440 |
| #15 | 30 | 25 | 750 | 17 | | 50 | | | 498 |
| #16 | 30 | 25 | 750 | 21 | | 33 | | | 506 |
| #17 | 30 | 25 | 750 | 17 | | 42 | | | 510 |
| #18 | 30 | 25 | 750 | 17 | | 33 | | | 384 |
| #19 | 30 | 25 | 750 | 17 | | 45 | | | 514 |
| #20 | 30 | 27 | 810 | 19 | | 36 | | | 530 |
| #21 | 30 | 27 | 810 | 19 | | 40 | | | 384 |
| #22 | 30 | 25 | 750 | 30 | | 44 | | | 323 |
| #23 | 30 | 27 | 810 | 38 | 1 | 47 | | | 419 |
| #24 | 30 | 27 | 810 | 38 | | 46 | | | 419 |
| #25 | 30 | 25 | 750 | 28 | | 21 | | | 267 |
| Gym, office, & stage | | | 4696 | 36 | 8 | 3 | | | 804 |
| Music room | 53 | 32 | 1696 | 38 | | 87 | | | 1011½ |
| AV Centre | 40 | 30 | 1200 | 30 | 21 | 4 | | | 486 |
| Physical Ed. room | 41 | 30 | 1230 | 30 | | 5 | | | 602 |
| Library | 35 | 45 | 1575 | 41 | | 73 | | | 792 |
| Art room | 55 | 32 | 1760 | 31 | | 194 | | 103 | 96 |
| Seminar room | 16 | 15 | 240 | 3 | | 7 | | | 131 |
| General office | | | 788 | 12 | 1 | 37 | | 39 | 114 |
| Principal's office | 18 | 13 | 234 | 5 | | 4 | | | 106 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

# ESTIMATES OF SCHOOL STAFFING REQUIREMENTS

School: Smith

## 1. Time Analysis Formula

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily requirements | 907 | minutes | x 200 = | 181,400 | minutes |
| Semi-weekly " | | " | x 80 = | | " |
| Weekly " | 511 | " | x 40 = | 20,440 | " |
| Semi-monthly " | 1 | " | x 20 = | 20 | " |
| Monthly " | 1731 | " | x 10 = | 17,310 | " |
| Other " | | | | 23,205 | " |
| | Total Requirements | | | 242,375 | minutes per year |
| Man-year expressed in minutes (divide by)[1] | | | | 112,800 | |
| | Staff requirements | | | 2.19 | men per year |

[1] Based on 40 hours per week with three weeks vacation and ten paid holidays.

## 2. Diversified Formula (Worrell, 1972)

$$\left( \frac{13}{8} \text{ Teachers} + \frac{193}{225} \text{ Pupils} + \frac{17}{11} \text{ Rooms} + \frac{26300}{15000} \text{ ft}^2 + \frac{8}{2} \text{ Acres} \right) \times \frac{1}{5} = 1.96 \text{ men per year}$$

2.42 men per year adjusted[2]

## 3. Diversified Formula ( Alberta Education)

$$\left( \frac{13}{8} \text{ Teachers} + \frac{193}{235} \text{ Pupils} + \frac{11}{8} \text{ Rooms} + \frac{26300}{16000} \text{ ft}^2 + \frac{8}{2} \text{ Acres} \right) \times \frac{1}{5} = 1.89 \text{ men per year}$$

2.3[illegible] men per year adjusted[2]

[2] Multiply "men per year" by "floor levels" factor and "equipment quality" factor.

Floor levels factor: 1.03

Equipment quality factor: 1.20

# SCHOOL SUMMARY REPORT

Number of Teachers: 13 Number of Pupils: 193 Area: 26300

Number of Rooms to be Cleaned: 17 Acres of Grass: 8

School: Smith

Quality of Maintenance Equipment: ☐ Excellent ☐ Good ☐ Fair ☒ Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Furnace Room (N) | 20 | 16 | 320 | | | 6 | | | 15 |
| " " (Ctr.) | 24 | 12 | 288 | | | 3 | | 3 | 12 |
| " " (S) | 12 | 10 | 120 | | | 1 | | | 6 |
| Furnaces, tanks | | | | 17 | | | | 130 | 345 |
| Kitchen | 10 | 8 | 80 | 16 | | | | 5 | 29 |
| Gym | 70 | 48 | 3360 | 38 | | 3 | | 176 | 952 |
| Stage | 40 | 24 | 960 | 25 | | | | 64 | 287 |
| Storage Room | 10 | 10 | 100 | 2 | | | 1 | | |
| Exit doors | | | | 20 | | | | | |
| Hallways | 402 | 12 | 4824 | 71 | | 5 | | 225 | 1220 |
| Stairways | 30 | 5 | 150 | 2 | | | | 8 | 10 |
| Sewing room | 22 | 10 | 220 | 14 | | | | 12 | 61 |
| Sick room | 20 | 10 | 200 | 13 | | | | 7 | 53 |
| Janitor's office | 10 | 10 | 100 | 4 | | | | 5 | 29 |
| Secretarys' office | 14 | 10 | 140 | 11 | | | | | 47 |
| Subtotal | | | 23126 | 670 | | 414 | 1 | 1351 | 7465 |
| [1] "Level" Multiplier = 1.03 | | | | 690 | | 426 | 1 | 1392 | 7689 |
| [2] Grounds* 60 mins/10,000ft$^2$ | | 20x | 80000 | | | | | | 9600 |
| | | 1x | 240000 | | | | | | 1440 |
| Subtotal | | | | 690 | | 426 | 1 | 1392 | 18729 |
| [3] "Equipment Quality" Multiplier = 1.20 | | | | 828 | | 511 | 1 | 1670 | 22475 |
| Other duties: Waste disposal | | 10 min/day | | 10 | | | | | |
| Check clocks | | .5 min ea | | 11 | | | | | |
| Tool maintenance per shift | | 10 min/shift | | 10 | | | | | |
| Open building | | 10 min/day | | 10 | | | | | |
| Close and lock building | | 10 min/day | | 10 | | | | | |
| Obtain supplies for shift | | 8 min/day | | 8 | | | | | |
| Clean entry doors-glass & woodwork | | 6 min ea | | | | | | | |
| [4] Sweep/clean outside walkways 3325 | | 5 min/100 ft$^2$ | | | | | | | 660 |
| 1. Fire extinguishers, incenerator | | | | | | | | | |
| 2. etc. | | | | 20 | | | | 61 | 70 |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| | | | | | | | | | |
| Totals for School (Minutes) | | | | 907 | | 511 | 1 | 1731 | 23205 |

[1] "Level" multiplier: one level-1.05; two levels-1.03; three levels-1.06.
[2] Cut grass lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multiplier: excellent-1.00; good-1.05; fair-1.10; poor-1.20.
[4] Walks cleaned four (4) times per year.



FORM 2

SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Principal's office | 12 | 10 | 120 | 9 | | | | 3 | 50 |
| Boys' restroom | 36 | 12 | 432 | 71 | | | | 9 | 186 |
| Girls' restroom | 36 | 12 | 432 | 81 | | | | 9 | 186 |
| Janitor's room | 6 | 4 | 24 | 2 | | 1 | | | 6 |
| " Storage room | 24 | 12 | 288 | | | 3 | | | |
| Classroom # 1 | 32 | 22 | 704 | 14 | | 27 | | 44 | 255 |
| # 2 | 32 | 24 | 768 | 16 | | 32 | | 49 | 278 |
| # 3 | 40 | 24 | 960 | 17 | | 40 | | 59 | 348 |
| # 4 | 36 | 34 | 1224 | 19 | | 26 | | 71 | 384 |
| # 5 | 32 | 22 | 704 | 14 | | 28 | | 43 | 254 |
| # 6 | 32 | 22 | 704 | 14 | | 22 | | 44 | 255 |
| # 7 | 32 | 22 | 704 | 13 | | 20 | | 44 | 279 |
| # 8 | 32 | 22 | 704 | 13 | | 25 | | 44 | 255 |
| # 9 | 30 | 22 | 660 | 16 | | 34 | | 43 | 242 |
| #10 | 22 | 22 | 484 | 13 | | 28 | | 32 | 194 |
| #11 | 22 | 22 | 484 | 15 | | 10 | | 32 | 221 |
| #12 | 30 | 20 | 600 | 20 | | 32 | | 45 | 251 |
| Library | 30 | 22 | 660 | 14 | | 30 | | 51 | 224 |
| Science lab | 34 | 22 | 748 | 34 | | 20 | | 52 | 292 |
| Teachers' workroom | 22 | 20 | 440 | 8 | | 17 | | 26 | 146 |
| Staff room | 20 | 12 | 240 | 19 | | | | 11 | 66 |
| Staff restroom | 10 | 10 | 100 | 15 | | | | 5 | 27 |
| Storage room | 10 | 8 | 80 | | | 1 | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

## ESTIMATES OF SCHOOL STAFFING REQUIREMENTS

School: Boyle

### 1. Time Analysis Formula

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily requirements | 1329 | minutes | x | 200 = | 265,800 | minutes |
| Semi-weekly " | 33 | " | x | 80 = | 2,640 | " |
| Weekly " | 1532 | " | x | 40 = | 61,280 | " |
| Semi-monthly " | 196 | " | x | 20 = | 3,920 | " |
| Monthly " | 53 | " | x | 10 = | 530 | " |
| Other " | | | | | 37,559 | " |
| | | Total Requirements | | | 371,729 | minutes per year |
| Man-year expressed in minutes (divide by)[1] | | | | | 112,800 | |
| | | Staff requirements | | | 3.30 | men per year |

[1]Based on 40 hours per week with three weeks vacation and ten paid holidays.

### 2. Diversified Formula (Worrell, 1972)

$$\left( \frac{17}{8} \text{ Teachers} + \frac{322}{225} \text{ Pupils} + \frac{26}{11} \text{ Rooms} + \frac{39125}{15000} \text{ ft}^2 + \frac{8}{2} \text{ Acres} \right) \times \frac{1}{5} = \frac{2.51}{2.64} \text{ men per year}$$

men per year adjusted[2]

### 3. Diversified Formula ( Alberta Education)

$$\left( \frac{17}{8} \text{ Teachers} + \frac{322}{235} \text{ Pupils} + \frac{15}{8} \text{ Rooms} + \frac{39125}{16000} \text{ ft}^2 + \frac{8}{2} \text{ Acres} \right) \times \frac{1}{5} = \frac{2.36}{2.48} \text{ men per year}$$

men per year adjusted[2]

[2]Multiply "men per year" by "floor levels" factor and "equipment quality" factor.

Floor levels factor: 1.00

Equipment quality factor: 1.05

# SCHOOL SUMMARY REPORT

Number of Teachers: 17 Number of Pupils: 322 Area: 39,125

Number of Rooms to be Cleaned: 26 Acres of Grass: 8

School: Boyle

Quality of Maintenance Equipment: ☐Excellent ☒Good ☐Fair ☐Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Storage room | 10 | 8 | 80 | 1 | | | | 2 | |
| Staff restroom | 8 | 6 | 48 | 12 | 1 | 3 | | | 73 |
| " " | 8 | 6 | 48 | 14 | 1 | 3 | | | 73 |
| " " | 6 | 4 | 24 | 13 | 1 | 3 | | | 51 |
| Boys' restroom | 26 | 10 | 260 | 47 | 2 | | | | 218 |
| " " | 24 | 10 | 240 | 40 | 2 | | | | 206 |
| " " | 34 | 14 | 476 | 66 | 2 | | | | 352 |
| Girls' restroom | 24 | 10 | 240 | 46 | 2 | | | | 206 |
| " " | 26 | 10 | 260 | 51 | 2 | | | | 218 |
| " " | 34 | 14 | 476 | 59 | 4 | | | | 522 |
| Nurse's room | 26 | 8 | 208 | 23 | 2 | | | | 169 |
| Penthouse | 22 | 14 | 308 | | | 4 | | | 24 |
| " | 22 | 14 | 308 | | | 4 | | | 24 |
| Janitor's store room | 16 | 12 | 192 | 4 | | | | | 64 |
| Janitor's office | 14 | 10 | 140 | 9 | | | | | 104 |
| Subtotal | | | 41844 | 1189 | 31 | 1178 | 187 | 50 | 22083 |
| [1] "Level" Multiplier = 1.00 | | | | 1189 | 31 | 1178 | 187 | 50 | 22083 |
| [2] Grounds* 60 mins/10,000ft$^2$ | 20x | | 80000 | | | | | | 9600 |
| | 1x | | 240000 | | | | | | 1440 |
| Subtotal | | | | 1189 | 31 | 1178 | 187 | 50 | 33123 |
| [3] "Equipment Quality" Multiplier = 1.05 | | | | 1248 | 33 | 1237 | 196 | 53 | 34779 |
| Other duties: Waste disposal 10 min/day | | | | 10 | | | | | |
| Check clocks .5 min ea | | | | 13 | | | | | |
| Tool maintenance per shift 10 min/shift | | | | 10 | | | | | |
| Open building 10 min/day | | | | 10 | | | | | |
| Close and lock building 10 min/day | | | | 10 | | | | | |
| Obtain supplies for shift 8 min/day | | | | 8 | | | | | |
| Clean entry doors-glass & woodwork 6 min ea | | | | 20 | | | | | |
| [4] Sweep/clean outside walkways 7975 5 min/100 ft$^2$ | | | | | | | | | 1600 |
| 1. cement at doors | | | 5880 | | | 295 | | | 1180 |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| | | | | | | | | | |
| Totals for School (Minutes) | | | | 1329 | 33 | 1532 | 196 | 53 | 37559 |

[1] "Level" multiplier: one level-1.00; two levels-1.03; three levels-1.06.
[2] Cut grass lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multiplier: excellent-1.00; good-1.05; fair-1.10; poor-1.20.
[4] Walks cleaned four (4) times per year.

# SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Workroom | 16 | 14 | 224 | 11 | | | 3 | | 134 |
| Resale room | 22 | 16 | 352 | | | 4 | | | 105 |
| Gym | 82 | 50 | 4100 | 38 | 12 | 3 | | | 1261 |
| Home Economics room | 40 | 36 | 1440 | 65 | | 23 | 10 | | 1127 |
| Library | 40 | 34 | 1360 | 40 | | 29 | 9 | | 933 |
| Storage room | 26 | 10 | 260 | 3 | | | | 9 | 168 |
| Science lab. room | 48 | 26 | 1248 | 44 | | 27 | 6 | | 998 |
| Furnace room | 18 | 10 | 180 | 6 | | 60 | | | 120 |
| Classroom # 1 | 30 | 30 | 900 | 18 | | 30 | 12 | 24 | 737 |
| 2 | 30 | 30 | 900 | 19 | | 27 | 12 | | 535 |
| 3 | 30 | 30 | 900 | 19 | | 33 | 12 | | 535 |
| 4 | 30 | 30 | 900 | 24 | | 30 | 12 | | 535 |
| 5 | 30 | 30 | 900 | 18 | | 35 | 12 | | 526 |
| 6 | 30 | 30 | 900 | 19 | | 46 | | | 434 |
| 7 | 30 | 30 | 900 | 17 | | 23 | 12 | | 574 |
| 8 | 30 | 30 | 900 | 17 | | 23 | 12 | | 526 |
| 9 | 30 | 30 | 900 | 16 | | 25 | 12 | | 526 |
| 10 | 30 | 30 | 900 | 16 | | 32 | 12 | | 526 |
| 11 | 30 | 30 | 900 | 17 | | 30 | 12 | | 526 |
| 12 | 36 | 26 | 936 | 18 | | 43 | 5 | | 620 |
| 13A | 26 | 20 | 520 | 14 | | 31 | 4 | | 225 |
| 13B | 26 | 20 | 520 | 15 | | 7 | 4 | | 225 |
| 14 | 36 | 26 | 936 | 19 | | 31 | 5 | | 570 |
| 15 | 36 | 26 | 936 | 18 | | 41 | 4 | | 570 |
| 16 | 36 | 26 | 936 | 19 | | 29 | 4 | | 570 |
| Storage room | 22 | 16 | 352 | | | 4 | | | 105 |
| Storage room | 22 | 16 | 352 | | | 4 | | | 105 |
| Storage room | 16 | 10 | 160 | 2 | | 3 | | | 64 |
| Boiler room | 20 | 14 | 280 | 4 | | | | | 24 |
| Staff room | 24 | 16 | 384 | 29 | | | 6 | | 60 |
| Ass't Prin. office | 14 | 12 | 168 | 8 | | 4 | | | 84 |
| Secretary's office | 20 | 16 | 320 | 11 | | 5 | 4 | | 146 |
| Principal's office | 16 | 12 | 192 | 11 | | | 3 | | 90 |
| Stairways | 40 | 10 | 400 | 3 | | | | 15 | 50 |
| Hallways | 696 | 10 | 6960 | 132 | | 427 | | | 3154 |
| Dark room | 12 | 8 | 96 | 3 | | 1 | | | 43 |

# SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Shop Store room | 10 | 10 | 100 | 4 | | 2 | | | 26 |
| Shop classroom | 48 | 18 | 864 | 23 | | 9 | | | 401 |
| Shop | 66 | 46 | 3036 | 50 | | 24 | | | 1440 |
| Gym Store room | 16 | 14 | 224 | 2 | | 2 | | | 58 |
| " " " | 16 | 14 | 224 | 2 | | 2 | | | 58 |
| Gym stage | 48 | 12 | 576 | 10 | | 12 | | | 265 |

# ESTIMATES OF SCHOOL STAFFING REQUIREMENTS

School: Grassland

## 1. Time Analysis Formula

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily requirements | 1041 | minutes | x 200 = | 208,200 | minutes |
| Semi-weekly " | | " | x 80 = | | " |
| Weekly " | 682 | " | x 40 = | 27,280 | " |
| Semi-monthly " | | " | x 20 = | | " |
| Monthly " | 1128 | " | x 10 = | 11,280 | " |
| Other " | | | | 23,045 | " |
| | | Total Requirements | | 269,805 | minutes per year |
| | | Man-year expressed in minutes (divide by)[1] | | 112,800 | |
| | | Staff requirements | | 2.39 | men per year |

[1] Based on 40 hours per week with three weeks vacation and ten paid holidays.

## 2. Diversified Formula (Worrell, 1972)

$$\left( \frac{15}{8} \text{ Teachers} + \frac{275}{225} \text{ Pupils} + \frac{18}{11} \text{ Rooms} + \frac{26860}{15000} \text{ ft}^2 + \frac{2}{2} \text{ Acres} \right) \times \frac{1}{5} = \underline{1.50} \text{ men per year}$$

$$\underline{1.65} \text{ men per year adjusted}^2$$

## 3. Diversified Formula ( Alberta Education)

$$\left( \frac{15}{8} \text{ Teachers} + \frac{275}{235} \text{ Pupils} + \frac{12}{8} \text{ Rooms} + \frac{26860}{16000} \text{ ft}^2 + \frac{2}{2} \text{ Acres} \right) \times \frac{1}{5} = \underline{1.44} \text{ men per year}$$

$$\underline{1.58} \text{ men per year adjusted}^2$$

multiply "men per year" by "floor levels" factor and "equipment quality" factor.

Floor levels factor: 1.00

Equipment quality factor: 1.10

# SCHOOL SUMMARY REPORT

Num of Teachers: 15 Number of Pupils: 275 Area: 26860

Number of Rooms to be Cleaned: 18 Acres of Grass: 2

School: Grassland

Quality of Maintenance Equipment: ☐Excellent ☐Good ☐Fair ☐Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Science Lab | 40 | 30 | 1200 | 43 | | 36 | | 51 | 404 |
| Typing Room | 30 | 30 | 900 | 19 | | 31 | | 35 | 300 |
| Classroom #14 | 30 | 30 | 900 | 16 | | 32 | | 36 | 263 |
| 13 | 30 | 30 | 900 | 16 | | 33 | | 36 | 263 |
| 12 | 30 | 30 | 900 | 16 | | 29 | | 36 | 263 |
| 11 | 30 | 30 | 900 | 15 | | 29 | | 36 | 257 |
| 9 | 30 | 30 | 900 | 16 | | 27 | | 36 | 263 |
| 8 | 30 | 30 | 900 | 17 | | 28 | | 36 | 221 |
| 7 | 30 | 30 | 900 | 16 | | 33 | | 36 | 263 |
| 6 | 30 | 30 | 900 | 16 | | 35 | | 36 | 263 |
| 5 | 30 | 30 | 900 | 16 | | 33 | | 12 | 263 |
| 4 | 30 | 30 | 900 | 15 | | 33 | | 36 | 263 |
| 3 | 30 | 30 | 900 | 16 | | 28 | | 36 | 263 |
| 2 | 30 | 30 | 900 | 16 | | 62 | | 12 | 263 |
| 1 | 30 | 30 | 900 | 17 | | 63 | | 12 | 564 |
| Subtotal | | | 26,608 | 819 | | 620 | | 871 | 9627 |
| [1] "Level" Multiplier = | | | | 819 | | 620 | | 871 | 9627 |
| [2] Grounds* 60 mins/10,000ft$^2$ | | | 80,000 | | | | | | 9600 |
| Subtotal | | | | 819 | | 620 | | 871 | 19227 |
| [3] "Equipment Quality" Multiplier = 1.10 | | | | 901 | | 682 | | 958 | 21150 |
| Other duties: Waste disposal 10 min/day | | | | 10 | | | | | |
| Check clocks .5 min ea | | | | 11 | | | | | |
| Tool maintenance per shift 10 min/shift | | | | 10 | | | | | |
| Open building 10 min/day | | | | 10 | | | | | |
| Close and lock building 10 min/day | | | | 10 | | | | | |
| Obtain supplies for shift 8 min/day | | | | 8 | | | | | |
| Clean entry doors-glass & woodwork 6 min ea | | | | 20 | | | | | |
| [4] Sweep/clean outside walkways 5 min/100 ft$^2$ | | | | 10 | | | | | 1640 |
| 1. Classroom furnaces 17 ea. | | | | 51 | | | | 170 | 255 |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| | | | | | | | | | |
| Totals For School (Minutes) | | | | 1041 | | 682 | | 1128 | 23045 |

[1] "Level" multiplier: one level-1.00; two levels-1.03; three levels-1.06.
[2] Cut grass lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multiplier: excellent-1.00; good-1.05; fair-1.10; poor-1.20.
[4] Walks cleaned four (4) times per year.

# SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Furnace Room | | | 80 | 5 | | 1 | | | 6 |
| Furnace Room | | | 240 | 12 | | 2 | | 90 | 132 |
| Janitor's Storeroom | 10 | 8 | 80 | 9 | | | | | 27 |
| Janitor's Office | 10 | 10 | 100 | 11 | | | | 2 | 27 |
| Hallways | 410 | 10 | 4100 | 69 | | | | 108 | 2134 |
| Staff Restroom | 8 | 8 | 64 | 15 | | | | 2 | 27 |
| Girl's Restroom | 30 | 10 | 300 | 96 | | | | 7 | 79 |
| Boy's Restroom | 30 | 10 | 300 | 109 | | | | 7 | 79 |
| Staff Room | 18 | 12 | 216 | 26 | | | | 3 | 75 |
| Sec'ty's Storeroom | 10 | 8 | 80 | 11 | | | | | 41 |
| Sec'ty's Office | 14 | 10 | 140 | 14 | | | | | 42 |
| Principal's Office | 12 | 10 | 120 | 10 | | | | 2 | 44 |
| Gym Store Room | 10 | 10 | 100 | 2 | | 10 | | 3 | 29 |
| Gym Stage | 36 | 18 | 648 | 19 | | | | 14 | 205 |
| Gym | 96 | 50 | 4800 | 53 | | | | 110 | 1150 |
| Kitchen | 12 | 10 | 120 | 20 | | 26 | | | 245 |
| Library | 34 | 30 | 1020 | 38 | | 31 | | 7 | 602 |
| Storage Room | 12 | 10 | 120 | 2 | | 16 | | 26 | 245 |
| Nurse's Room | 18 | 10 | 180 | 28 | | 2 | | 8 | 62 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

ESTIMATES OF SCHOOL STAFFING REQUIREMENTS

School: Rochester

1. Time Analysis Formula

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily requirements | 543 | minutes | x 200 = | 108,600 | minutes |
| Semi-weekly " | | " | x 80 = | | " |
| Weekly " | 331 | " | x 40 = | 132,400 | " |
| Semi-monthly " | | " | x 20 = | | " |
| Monthly " | 1,007 | " | x 10 = | 10,070 | " |
| Other " | | | | 13,507 | " |
| | Total Requirements | | | 145,417 | minutes per year |
| Man-year expressed in minutes (divide by)[1] | | | | 112,800 | |
| | Staff requirements | | | 1.29 | men per year |

[1]Based on 40 hours per week with three weeks vacation and ten paid holidays.

2. Diversified Formula (Worrell, 1972)

$$\left( \frac{7}{8} \text{ Teachers} + \frac{142}{225} \text{ Pupils} + \frac{11}{11} \text{ Rooms} + \frac{23673}{15000} \text{ ft}^2 + \frac{1}{2} \text{ Acres} \right) \times \frac{1}{5} = 0.92 \text{ men per year}$$

1.14 men per year adjusted[2]

3. Diversified Formula ( Alberta Education)

$$\left( \frac{7}{8} \text{ Teachers} + \frac{142}{235} \text{ Pupils} + \frac{6}{8} \text{ Rooms} + \frac{23673}{16000} \text{ ft}^2 + \frac{1}{2} \text{ Acres} \right) \times \frac{1}{5} = 0.84 \text{ men per year}$$

1.04 men per year adjusted[2]

[2]Multiply "men per year" by "floor levels" factor and "equipment quality" factor.

Floor levels factor: 1.03

Equipment quality factor: 1.20

# SCHOOL SUMMARY REPORT

Number of Teachers: 7 Number of Pupils: 142 Area: 23673

Number of Rooms to be Cleaned: 11 Acres of Grass: 1

School: Rochester

Quality of Maintenance Equipment: ☐Excellent ☐Good ☐Fair ☐Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Library | 32 | 20 | 640 | 9 | | 20 | | 37 | 182 |
| Kitchen | 20 | 8 | 160 | 15 | | | | 12 | 107 |
| Classroom #1 | 36 | 20 | 720 | 13 | | 28 | | 44 | 368 |
| 2 | 30 | 24 | 720 | 13 | | 29 | | 43 | 451 |
| 3 | 40 | 20 | 800 | 12 | | 34 | | 49 | 416 |
| 4 | 32 | 20 | 640 | 10 | | 30 | | 39 | 323 |
| 5 | 36 | 20 | 720 | 11 | | 29 | | 93 | 333 |
| 6 | 36 | 20 | 720 | 12 | | 29 | | 45 | 369 |
| Study Room | 10 | 10 | 100 | 6 | | 4 | | 6 | 49 |
| Science Room | 48 | 24 | 1152 | 36 | | 27 | | 66 | 742 |
| Gym | 70 | 50 | 3500 | 38 | | | | 158 | 1340 |
| Storage Room | 20 | 6 | 120 | 7 | | | | 5 | 59 |
| Stage | 40 | 24 | 960 | 14 | | 19 | | 52 | 501 |
| Janitor's Storage Room | 41 | 4 | 164 | 10 | | | | 10 | 99 |
| Janitor's Storage Room | 12 | 6 | 72 | 3 | | | | 3 | 24 |
| Subtotal | | | 13228 | 375 | | 268 | | 815 | 6251 |
| [1] "Level" Multiplier = 1.03 | | | | 386 | | 276 | | 839 | 6439 |
| [2] Grounds* 60 mins/10,000ft$^2$ | | | 40000 | | | | | | 4800 |
| Subtotal | | | | 386 | | 276 | | 839 | 11239 |
| [3] Equipment Quality Multiplier = 1.20 | | | | 463 | | 331 | | 1007 | 13487 |
| Other duties: Waste disposal 10 min/day | | | | 10 | | | | | |
| Check clocks .5 min ea | | | | 7 | | | | | |
| Tool maintenance per shift 10 min/shift | | | | 10 | | | | | |
| Open building 10 min/day | | | | 10 | | | | | |
| Close and lock building 10 min/day | | | | 10 | | | | | |
| Obtain supplies for shift 8 min/day | | | | 8 | | | | | |
| Clean entry doors-glass & woodwork 6 min ea | | | | 20 | | | | | |
| [4] Sweep/clean outside walkways 5 min/100 ft$^2$ | | | | 5 | | | | | 20 |
| 1. | | | | | | | | | |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| Totals for School (Minutes) | | | | 543 | | 331 | | 1007 | 13507 |

[1] "Level" multiplier: one level-1.00; two levels-1.03; three levels-1.06.
[2] Cut grass lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multiplier: excellent-1.00; good-1.05; fair-1.10; poor-1.20.
[4] Walks cleaned four (4) times per year.



FORM 2

SCHOOL SUMMARY REPORT

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Storage Room | 12 | 6 | 72 | 3 | | | | 3 | 32 |
| Storage Room | 12 | 6 | 72 | 4 | | | | 3 | 32 |
| Typing Room | 28 | 14 | 392 | 31 | | | | 24 | 207 |
| Playschool | 28 | 14 | 392 | 8 | | 19 | | 24 | 207 |
| Boy's Restroom | 20 | 14 | 280 | 36 | | | | 40 | 154 |
| Girl's Restroom | 20 | 14 | 280 | 28 | | | | 40 | 154 |
| Staff Room | 8 | 6 | 48 | 15 | | | | 4 | 33 |
| Boy's Shower | 18 | 12 | 216 | 18 | | | | 1 | 15 |
| Girl's Shower | 18 | 12 | 216 | 18 | | | | 1 | 15 |
| Furnace | | | | 2 | | | | 10 | 15 |
| Storage Room | 12 | 6 | 72 | 3 | | | | 3 | 24 |

ESTIMATES OF SCHOOL STAFFING REQUIREMENTS

School: Perryvale

1. Time Analysis Formula

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily requirements | 412 | minutes | x 200 = | 82,400 | minutes |
| Semi-weekly " | | " | x 80 = | | " |
| Weekly " | 199 | " | x 40 = | 7,960 | " |
| Semi-monthly " | | " | x 20 = | | " |
| Monthly " | 589 | " | x 10 = | 5,890 | " |
| Other " | | | | 5,806 | " |
| | | Total Requirements | | 102,056 | minutes per year |
| Man-year expressed in minutes (divide by)[1] | | | | 112,800 | |
| | | Staff requirements | | 0.90 | men per year |

[1] Based on 40 hours per week with three weeks vacation and ten paid holidays.

2. Diversified Formula (Worrell, 1972)

$$\left( \frac{1.7}{8} \text{ Teachers} + \frac{29}{225} \text{ Pupils} + \frac{8}{11} \text{ Rooms} + \frac{11180 \text{ ft}^2}{15000} + \frac{6}{2} \text{ Acres} \right) \times \frac{1}{5} = \frac{0.96}{1.15} \text{ men per year adjusted}^2$$

3. Diversified Formula ( Alberta Education)

$$\left( \frac{1.7}{8} \text{ Teachers} + \frac{29}{235} \text{ Pupils} + \frac{2}{8} \text{ Rooms} + \frac{11180 \text{ ft}^2}{16000} + \frac{6}{2} \text{ Acres} \right) \times \frac{1}{5} = \frac{0.86}{1.03} \text{ men per year adjusted}^2$$

[2] Multiply "men per year" by "floor levels" factor and "equipment quality" factor.

Floor levels factor: 1.00

Equipment quality factor: 1.20

# SCHOOL SUMMARY REPORT

Number of Teachers: 1.7 Number of Pupils: 29 Area: 11180

Number of Rooms to be Cleaned: 8 Acres of Grass: 6

School: Perryvale

Quality of Maintenance Equipment: ☐Excellent ☐Good ☐Fair ☒Poor

| Hallways and room numbers and descriptions | Length | Width | Area | Daily | Semi-weekly | Weekly | Semi-monthly | Monthly | Other |
|---|---|---|---|---|---|---|---|---|---|
| Janitor's Room | 10 | 10 | 100 | 1 | | | | 3 | 6 |
| Hallways | 130 | 10 | 1300 | 19 | | | | 25 | 284 |
| Staffroom | 12 | 10 | 120 | 14 | | 10 | | 3 | 35 |
| Sec'ty's Office | 18 | 10 | 180 | 11 | | | | 13 | 62 |
| Girl's Restroom | 20 | 14 | 280 | 38 | | 6 | | 14 | 73 |
| Boy's Restroom | 20 | 14 | 280 | 40 | | 2 | | 14 | 73 |
| Gym Storage | 10 | 10 | 100 | 2 | | 1 | | | 29 |
| Gym Stage | 40 | 18 | 720 | 9 | | 18 | | | 172 |
| Gym | 60 | 40 | 2400 | 28 | | 3 | | 5 | 677 |
| Science Lab. | 40 | 30 | 1200 | 37 | | 29 | | 44 | 339 |
| Classroom #1 | 30 | 30 | 900 | 16 | | 19 | | 59 | 263 |
| 2 | 30 | 30 | 900 | 16 | | 26 | | 59 | 263 |
| 3 | 30 | 30 | 900 | 16 | | 14 | | 59 | 263 |
| 4 | 30 | 30 | 900 | 16 | | 14 | | 59 | 263 |
| 5 | 30 | 30 | 900 | 16 | | 24 | | 59 | 263 |
| Subtotal | | | 11180 | 279 | | 166 | | 416 | 3065 |
| [1] "Level" Multiplier = 1.00 | | | | 279 | | 166 | | 416 | 3065 |
| [2] Grounds* 60 mins/10,000ft$^2$ | | 1x | 240000 | | | | | | 1440 |
| Subtotal | | | | 279 | | 166 | | 416 | 4505 |
| [3] "Equipment Quality" Multiplier = 1.20 | | | | 335 | | 199 | | 499 | 5406 |
| Other duties: Waste disposal | | 10 min/day | | 10 | | | | | |
| Check clocks | | .5 min ea | | 5 | | | | | |
| Tool maintenance per shift | | 10 min/shift | | 10 | | | | | |
| Open building | | 10 min/day | | 10 | | | | | |
| Close & lock building | | 10 min/day | | 10 | | | | | |
| Obtain supplies for shift | | 8 min/day | | 8 | | | | | |
| Clean entry doors-glass & woodwork | | 6 min ea | | | | | | | |
| Sweep/clean outside walkways 1400 | | 5 min/100 ft$^2$ | | | | | | | 280 |
| 1. Furnaces | | | | 12 | | | | 90 | 120 |
| 2. Exit doors | | | | 12 | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| | | | | | | | | | |
| Totals for School (Hours) | | | | 412 | | 199 | | 589 | 5806 |

[1] "Level" multiplier: one level-1.00; two levels-1.03; three levels-1.06.
[2] Cut grass/lawns twenty (20) times per year. Other grass areas once per year.
[3] "Equipment" multiplier: excellent-1.00; good-1.05; fair-1.10; poor-1.20.
* Walks cleaned four (4) times per year.

alberta
vocational
centre

10215 - 108 STREET
EDMONTON, ALBERTA
T5J 1L6
Tel. 427-2741

December 22, 1976

Mr. Hathaway
Department of Education
Executive Building
10th Floor
10105 - 109 Street
EDMONTON, Alberta

Dear Mr. Hathaway:

Please find enclosed the information on the Custodial Training Course requested by you. If there is anything further we can be of assistance to you in, Mr. McDonough and myself will be pleased to be of assistance.

Yours truly,

J. Dunne

J. Dunne, Program Head
Nursing Orderly Program

JD/pj
encl.



OPERATING UNDER THE JURISDICTION OF THE MINISTER OF ADVANCED EDUCATION AND MANPOWER/GOVERNMENT OF ALBERTA

ALBERTA VOCATIONAL CENTRE

EDMONTON

**COURSE TITLE:** Custodial Training Course

**COURSE DESCRIPTION:** Maintenance including procedure necessary for the cleaning of all types of buildings

**COURSE AIM:** Provide trainee with necessary knowledge of housekeeping skills to enable him/her to care for costly property that needs constant attention to prevent wear, progressive depreciation and expensive repairs.

**ASSOCIATED PROCEDURES:**

1. Dirt Control
2. Floor Machines
3. Cleaning Agents
4. Floor Stripping
5. Floor Sealers and Finishers
6. Carpet Care
7. Washroom Care
8. Fixture and Furniture Care
9. Ground Maintenance
10. General Building Repairs
11. Material and Equipment
12. Pest Control
13. Swimming Pool Maintenance
14. Safety in Housekeeping
15. Maintenance and Cleaning of Metals
16. Communications
17. Human Behaviour

**LENGTH OF COURSE:** 6 Weeks

i) Theory & Lab. - 4 weeks
ii) Practice - 2 weeks

**EXAMS:**

| | |
|---|---|
| Theory - 8exams | 20% |
| 1 Final Exam | 20% |
| Practice | 40% |
| Assignments | 20% |
| Total | 100% |

REFERENCE:

(1) Alberta Landscape development; Pruning Manual; Queen's Printer; Alberta.

(2) Alberta Environment; Recommended Swimming Pool Design and Operating Standards; Queen's Printer; Alberta. 197.

(3) Alberta Environment; Swimming Pool Operators' Manual; Queen's Printer; Alberta. 1973

(4) American Institute of Maintenance; Floor Care Guide; California. 1975.

(5) American Institute of Maintenance; Floor Care Materials; Second Edition; California. 1974

(6) American Institute of Maintenance; Handy Maintenance Tips; Fifth Edition; California. 1973

(7) American Institute of Maintenance; Selection and Care of Cleaning Equipment Including Mechanical Maintenance; Third Edition; California. 1973

(8) Berkeley, Bernard; Floors and Floor Maintenance; Cornell University; Ithaca; New York. 1967

(9) Jess, A.L; Landscape Maintenance; Landscape Development Department; Edmonton; 1972.

(10) National Sanitary Supply Association; Modern Cleaning Methods, History of Sanitation: Part 1; Chicago; 1952

(11) Tucker, Gina: The Science of Housekeeping; Institutions Magazine; Chicago. 1970

(12) Wertenberger, Morris D. Jr; Floor Maintenance Manual; Trade Press Publishing Co; Wisconsin, 1968

(13) Wertenberger, Morris D. Jr; Lofgrem, D.E.; Floor Maintenance Manual; Trade Press Publishing Co; Wisconsin: 1972

August, 1976

WORKSHEET FOR CALCULATING CUSTODIAL FEES FOR NON-SCHOOL USE OF SCHOOLS

| Rooms and Areas Used | Daily Custodial Requirements (Minutes) |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| Subtotal | |
| Equipment multiplier ( ) | |
| Levels multiplier ( ) | |
| Opening building | |
| Closing building | |
| Other activities: | |
| | |
| | |
| | |
| Total custodial time | _____ minutes |
| | _____ hours |

Fee to be charged for custodial service $_____